Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

In the Matter of	)	
	)	
Rulemaking under Part 97 of	)	
the Communications Act of 1934,	)	RM-10740
Standards for Certain Amateur	)	
Radio Telephony Transmissions	)	

To: The Commission

COMMENTS OF AMATEUR LICENSEE W6LBV

1. This Commentator has been an Amateur Radio Service (ARS) licensee of the Commission for more than forty years, operates Amateur station W6LBV on the ARS frequency bands which are the subject of the instant Petition, and has reviewed many of the technical showings describing the subject area of the Petition. The Commentator, therefore, has status as an interested Party in this proceeding.

The Commentator was formerly active before the Commission in the creation, modification, and amendment of many of its Part 97 Rules (as well as other Rules parts). *Res ipso loquitur,* the preparation of these Comments after an absence from such activities of more than ten years indicates the gravity accorded to these proceedings.

2. Petitioners seemingly have misrepresented facts and have drawn specious conclusions in their attempt to instill their moralistic and regressive view of the ARS into the Part 97 Rules. As others have eloquently commented, the request is at considerable variance with the wishes of a plurality

of the ARS, does not seek to advance and indeed would probably inhibit the state of the radio art, and it should be denied out of hand.

THE PETITION CONTAINS MANY FACTUAL ERRORS

3. The Petition is rife with errors, beginning almost from its first sentence. For example, Petitioners state:

> By far the most popular of these emission types is Suppressed Carrier Single Sideband, designated as J3E and generally referred to as "SSB" (Petition at 1.0).

The Petitioners are myopic. In the ARS there is a high probability that at any given instant the number of narrowband FM communications (F3E), as used on the ARS bands above 29.0 MHz, outnumber the number of J3E communications below 29.0 MHz.

4. Petitioners state:

> The aim of these forward-thinking Amateurs who, in 1947, adapted SSB to Amateur radio was to reduce the occupied bandwidth of radiotelephony signals. (Petition at 1.0)

In fact, the "aim" was the elimination of heterodynes between adjacent frequency transmissions employing fully inserted carriers (A3E), which mode replacement also had the happy consequence of allowing closer "packing" of telephony transmissions, a fact which Petitioners themselves acknowledge in the same paragraph:

> "Sideband, through elimination of carrier heterodynes and reducing of channel width, has remarkably improved the communication capacity of our phone bands." (Petition at 1.0)

5. Petitioners state:

> The ARRL published details describing a scheme for "Amplitude Compandered SSB." ACSSB can pack about four times more voice transmission in a given band than can FM, but it never gained popularity either in commercial service or among amateurs *(sic)*. (Petition at 1.0)

The comparison of ACSSB occupied bandwidth with FM occupied bandwidth is both specious and irrelevant! In fact, ACSSB requires essentially the same occupied bandwidth as does SSB (J3E). It is not a "lower bandwidth mode" as Petitioners erroneously assert.

6. Petitioners state that

> .....two groups of amateur operators have cast aside the *de facto* SSB signal width of approximately 3 kHz on the high-frequency amateur bands, and have purposely *adjusted or misadjusted* their equipment..... (Petition at 1.0, emphasis supplied)

This is an unproven assertion; no evidence has been advanced to support this contention

7. Petitioners further state:

> This practice has .....generated up to twenty complaints per week to the Commission. (Petition at 1.0).

"Complaints" are not identically equal to Rules violations.

8. In proposing a restrictive "standard" for ARS J3E emissions, Petitioners advance the notion that:

> For those transmitters which would not [inherently] meet the standard, a simple

> *"high pass"* audio circuit could be installed between a microphone of a station and..... Most certainly such a device will not guarantee that signals wider than *de jure* standards do not appear.....(Petition at 4.0, emphasis supplied).

That Petitioners would advance this proposal is incomprehensible! A "high pass" circuit is precisely the wrong instrument for this application. Undoubtedly a "low pass" filter would be required, one which attenuated the higher audio frequencies while passing the lower frequencies to the transmitter. This is rudimentary engineering.

But even a "low pass" filter is no guarantee or assurance that transmitted occupied bandwidth will be constrained, as the Petitioners have correctly stated. An SSB transmitter employing a low pass audio filter, which filter might well be designed to restrict audio modulation to a maximum of 2.0 kHz, will when overdriving a power amplifier create "splatter" far in excess of 2.0 kHz of occupied bandwidth. There is no *de jure* substitute for astute operator control of a transmitter.

OCCUPIED BANDWIDTH PLEADINGS ARE INHERENTLY UNPRODUCTIVE

9. The ARS, especially on its medium and high frequency bands, is a dynamic communications structure. Communications are effected to comport with prevailing transmission conditions, which change ceaselessly from hour to hour. Channelized communications are generally not employed on these frequencies[1]. Thus there is no inherent requirement to "contain" occupied transmitted

[1] There are two possible exceptions. Certain ARS groups hold scheduled meetings ("nets") on identified HF band frequencies. However these frequencies are relinquished for general use when the nets conclude. The proposed new ARS 5 MHz band does contain channelized frequencies.

bandwidth to prevent overlay of modulation products from one identified channel to an adjacent identified channel.

Occupied bandwidth usage should be governed by prevailing operating conditions. At certain times, on the most popular ARS HF bands, it might be optimum to limit the occupied bandwidth of J3E emissions to less than 1 kHz[2]. At other times, on other ARS frequency bands[3], a telephony occupied bandwidth of 10 or even 20 kHz could easily be accommodated. Bandwidth usage decisions must be the responsibility of the control operators; a "one size fits all," simplistic, *de jure* approach cannot fit the panoply of conditions which exist within the ARS.

[2] Assuming availability of appropriate technology for accomplishing this.

[3] The ARS 1.8 MHz and 28 MHz bands come to mind here.

10. The Petitioners' conclusion that the occupied bandwidth of current A3E emissions is "acceptable" (Petition at 2.2) directly countermands their principal argument for the restriction of J3E emissions' occupied bandwidth. ARS practice has generally been to restrict the highest audio modulation frequencies for telephony transmitters to no more than 3.0 kHz[4]. As Petitioners correctly imply, this would result in an occupied bandwidth for A3E emissions of 6.0 kHz[5]. But this is exactly the same occupied bandwidth which Petitioners condemn when employed for J3E emissions! Petitioners fail to advance an explanation why the same absolute occupied bandwidth is reasonable and proper for one emissions mode, and wholly unsatisfactory for a different one.

MOST ARS STATIONS WILL NOT BE ABLE TO VERIFY COMPLIANCE WITH THE PROPOSED RULES

11. Curiously, while the Petitioners have proposed strict and invariant operational parameters for ARS J3E emissions, they have entirely failed to provide guidance concerning how affected operators can assure compliance with the proposed Rules.

The measurement of occupied bandwidth is not a simple procedure, and it is not amenable to easy implementation with simple instruments. Most ARS operators do not possess the sophisticated

[4] It is interesting to note, however, that contrary to Petitioners' assertions some ARS operators employing A3E emissions have devoted experimental effort to increasing the audio frequency responses of their transmitters to frequencies greater than 3 kHz.

[5] Which occupied bandwidth Petitioners would also seek to restrict to no more than 5.6 kHz (Petition at 3.0).

instruments, such as spectrum analyzers, which are required to make accurate measurements. But the proposed Rules are invariant: J3E emissions shall occupy no more than 2.8 kHz bandwidth on any amateur frequency below 28.8 MHz (Petition at #3).

Unlike the relatively simple measurements of operating frequency or transmitter power output, for which requirements ARS operators are given wide limits within which to remain in compliance, there is no latitude for error in the proposed Rules. If an ARS operator transmits with 2.75 kHz of occupied bandwidth, he will be in compliance. If, for any reason, the bandwidth increases to 2.85 kHz, he will have violated the Rules. There is little margin for error here, and no satisfactory procedure proposed by Petitioners by which an ARS operator can assure himself of compliance[6].

The question then arises, "How do Petitioners (and the Commission) propose to deal with Amateurs who have made a good faith effort to comply, but because of failure to obtain expensive radio frequency instrumentation still violate the proposed Rules?"

THE USE OF GREATER OCCUPIED BANDWIDTH IS NOT AN UNREASONABLE BURDEN FOR THE ARS

[6] Absent, of course, imposing the requirement for Type Accepted ARS equipment, a proposal which is anathema even to the Petitioners! (Petition at 3.0)

12. As stated *supra*, the ARS HF frequency bands are constantly in dynamic flux, and the mandating of fixed amounts of occupied bandwidth is usually not appropriate. Many times the bands can accommodate "extra" occupied bandwidth without difficulty or inconvenience to other ARS operators[7]. Taking the 14 MHz ARS frequency band as the standard[8], 3 kHz of occupied bandwidth represents about 1.5% of the total spectrum allocated by the Commission for telephonic transmissions; by extension 6 kHz represents about 3.0% Certainly under many, perhaps most, instances the consumption of less than 3% of the available telephony spectrum is not an undue hardship on most other ARS operators[9]

There is no purpose in a *de jure* restriction of occupied bandwidth, at the cost — so well documented by others responding to this Petition --- of restricting ARS experimentation by instituting such a high degree of mandatory conformance.

PRESENT EXPERIMENTERS ARE GUILTY OF NO MORE THAN OCCASIONAL LAPSES OF GOOD JUDGEMENT

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[7] Nevertheless Commentator does acknowledge that at certain times good Amateur practice would require conservation of occupied bandwidth.

[8] This is the frequency band on which much ARS audio experimentation occurs.

[9] And it is the same 3.0% amount which will be consumed, presumably without objection, if A3E emissions are utilized.

13. Petitioners have advanced a Procrustean solution to a relatively minor problem. Those few motivated ARS licensees who have experimented with improvements to transmitted speech indeed have, from time to time, transgressed good judgement in their operations[10]. There are times when the use of wider than normal occupied bandwidth is not appropriate. These experimenters should, at these times, discontinue operations or switch to less crowded ARS frequency bands. It is to be hoped that, with increasing experience, the experimenters will become more sensitive to these conditions. With increasing sensitivity, the postulated need and rationale for the proposed conforming, confining *de jure* solutions will diminish. This is the optimal solution; ARS cooperation and good will can remedy the instant problems and obviate the need for regulatory supervision.

SUMMARY: THE COMMISSION SHOULD REJECT THE INSTANT PETITION *IN TOTO*

14. Petitioners have made, at best, a marginal and muddled case for the adoption of new Part 97 Rules of a level of restrictiveness not recently seen. As documented in these Comments, many of the arguments Petitioners advance fail when examined closely. Following its long and honorable tradition, the ARS is fully capable of mediating the uses of its own frequency bands. Regulatory oversight is not required here, and higher levels of restrictions in the Rules are not the optimum

[10] It should be noted that the experimenters have gone to great lengths to explain their methods and their motives to the general ARS community. They appear to be transparent in their actions, and do not seek obfuscation.

direction. For all the reasons cited herein, Commentator urges the Commission to reject the Petition *in toto*.

Respectfully submitted,

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